



STIC Search Report

EIC 1700

STIC Database Tracking Number: 137097

TO: Janis Dote
Location: Rem 9C75
Art Unit : 1756
November 10, 2004

Case Serial Number: 10/667410

From: Kathleen Fuller
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-2505
Kathleen.Fuller@uspto.gov

Search Notes

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: JANIS DOTE Examiner #: 6827 Date: 11/11/04
 Art Unit: 1756 Phone Number 30571-272-1352 Serial Number: 101667410
 Mail Box and Bldg/Room Location: REH 9C 75 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Electrophotographic photoconductive method, apparatus, apparatus process cartridge and automotive surface layer coating
 Inventors (please provide full names): TAKAAKI IKEGAMI, TOMOYUKI SHIMADA, YASUO SUZUKI, NOZOMU TA MOTO,

HIDETOSHI KAMI
 Earliest Priority Filing Date: 9/24/02

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Search coating solutions in claims 19 and 20,
 especially search compounds of general
 formula 1 and 2. See attached claims

SEARCHED - INDEXED - SERIALIZED -
 FILED - COMPUTERIZED

REV

MAR 5 2005

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher: <u>X. Fuller</u>		NA Sequence (#) _____	STN <u>/</u> _____
Searcher Phone #:		AA Sequence (#) _____	Dialog _____
Searcher Location:		Structure (#) <u>/</u>	Questel/Orbit _____
Date Searcher Picked Up:		Bibliographic _____	Dr.Link _____
Date Completed: <u>11/10/04</u>		Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>		Fulltext _____	Sequence Systems _____
Clerical Prep Time:		Patent Family _____	WWW/Internet _____
Online Time: <u>30</u>		Other _____	Other (specify) _____

DATE 10/667410 11/10/04 Page 1

=> file reg
FILE 'REGISTRY' ENTERED AT 14:37:42 ON 10 NOV 2004
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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 8 NOV 2004 HIGHEST RN 777024-10-9
DICTIONARY FILE UPDATES: 8 NOV 2004 HIGHEST RN 777024-10-9

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

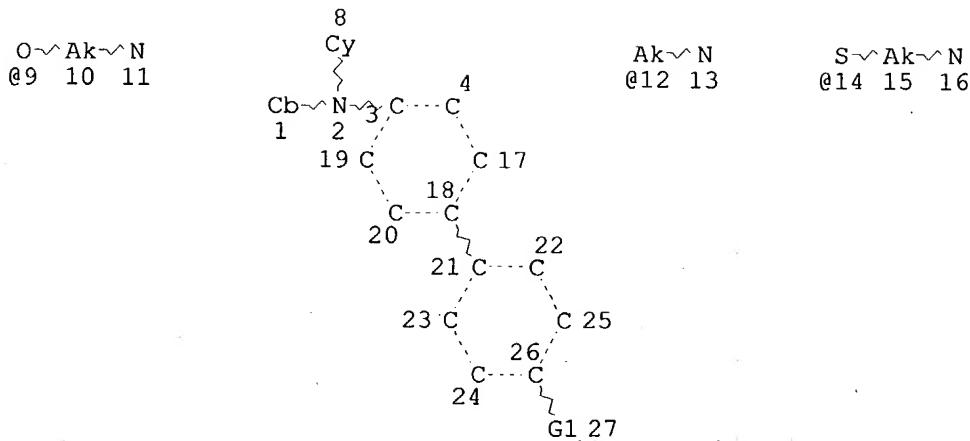
=> file hcaplus
FILE 'HCAPLUS' ENTERED AT 14:37:46 ON 10 NOV 2004
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FILE COVERS 1907 - 10 Nov 2004 VOL 141 ISS 20
FILE LAST UPDATED: 9 Nov 2004 (20041109/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que
L12 STR



VAR G1=9/12/14

NODE ATTRIBUTES:

NSPEC IS RC AT 11
 NSPEC IS RC AT 13
 NSPEC IS RC AT 16
 DEFAULT MLEVEL IS ATOM
 GGCAT IS UNS AT 1
 GGCAT IS UNS AT 8
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE

L14 30 SEA FILE=REGISTRY SSS FUL L12
 L16 16 SEA FILE=HCAPLUS ABB=ON L14
 L17 1 SEA FILE=HCAPLUS ABB=ON L16(L)COATING?
 L19 14 SEA FILE=HCAPLUS ABB=ON L16 AND ELECTROPHOTOG?
 L20 14 SEA FILE=HCAPLUS ABB=ON L17 OR L19
 L21 6 SEA FILE=HCAPLUS ABB=ON L16 AND COATING?
 L22 14 SEA FILE=HCAPLUS ABB=ON L20 OR L21

=> d 122 1-14 bib abs ind hitstr

*30 structures from
This query*

L22 ANSWER 1 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2004:842679 HCAPLUS

TI Image-forming apparatus containing triarylmethane compound photoreceptor surface layer
 IN Suzuki, Yasuo; Tamoto, Nozomu; Kami, Hideyoshi; Ikegami, Takaaki; Shimada, Tomoyuki; Yasutomi, Hiroshi
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 67 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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14 CA references with utility

PI JP 2004287371 A2 20041014 JP 2003-143923 20030521
 PRAI JP 2003-19366 A 20030128

AB Disclosed is the image-forming apparatus comprising a photoreceptor, a charging device, and a scanning device for forming an electrostatic latent image in the photoreceptor, wherein (a) the scanning device uses a laser beam having the beam diameter $\leq 35 \mu\text{m}$, (b) the photoreceptor has on an elec. conductive support a charge-generating layer, a charge-transporting layer, and a surface layer containing a triarylmethane compound having alkylamino, and (c) a sum of the film thicknesses of the charge-transporting layer and the surface layer on the support is $\leq 20 \mu\text{m}$. Further, the surface layer contains a carboxylic acid compound

IC ICM G03G005-147

ICS G03G005-04; G03G015-04; G03G015-043

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog** app photoreceptor surface layer triarylmethane compd

IT **Electrophotographic** apparatus

Electrophotographic photoconductors (photoreceptors)

(**electrophotog.** photoreceptors containing triarylmethane compound in surface layer)

IT 114037-67-1 501367-64-2 501367-65-3 501367-77-7 **676448-98-9**
 770730-00-2 770730-08-0 775347-48-3 775347-49-4 775347-50-7
 775347-51-8 775347-52-9 775347-53-0 775347-54-1 **775347-55-2**
 775347-56-3 775347-57-4 775347-58-5 775347-59-6 775347-60-9

RL: DEV (Device component use); USES (Uses)

(**electrophotog.** photoreceptors containing triarylmethane compound in surface layer)

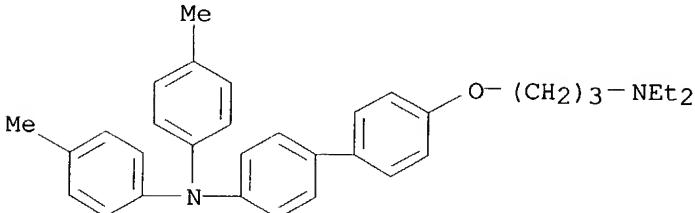
IT **676448-98-9 775347-55-2**

RL: DEV (Device component use); USES (Uses)

(**electrophotog.** photoreceptors containing triarylmethane compound in surface layer)

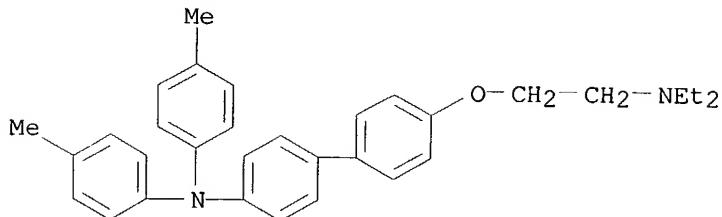
RN 676448-98-9 HCAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'-(3-(diethylamino)propoxy)-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



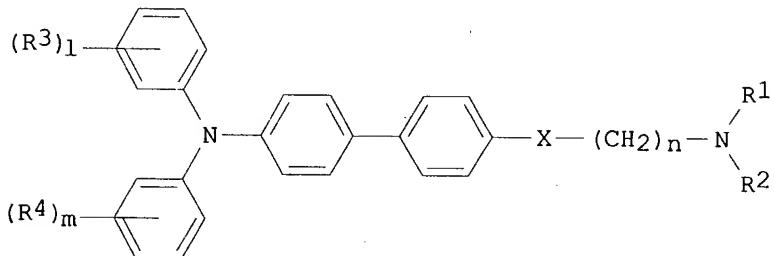
RN 775347-55-2 HCAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'-(2-(diethylamino)ethoxy)-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



L22 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2004:271543 HCAPLUS
 DN 140:294740
 TI Aminobiphenyls for **electrophotographic** photoconductors
 IN Shimada, Tomoyuki; Ikegami, Takaaki; Suzuki, Yasuo; Tamoto, Nozomu; Kami, Hidetoshi
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 16 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2004099561	A2	20040402	JP 2002-265967	20020911
PRAI JP 2002-265967		20020911		
OS MARPAT 140:294740				
GI				



I

AB The aminobiphenyls are I (R1, R2 = alkyl, aromatic hydrocarbyl; R1 and R2 may form N-containing heterocyclic ring; R3, R4 = C1-4 alkyl, alkoxy, halo; X = direct bond, O, S; l, m = 0-3; n = 2-4). **Electrophotog.** photoconductors containing I as charge-transporting agents produce high-resolution images and good durability.
 IC ICM C07C211-54
 ICS C07C217-80; C07C323-37; C07D209-86; C07D241-04; C07D295-08;
 G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 25
 ST aminobiphenyl charge transporter **electrophotog** photoconductor;

DATE 10/667410 11/10/04 Page 5

methylphenyl phenylpiperazylethoxybiphenyl charge transporter
electrophotog photoconductor

IT **Electrophotographic** photoconductors (photoreceptors)
(aminobiphenyls as charge-transporting agents for **electrophotog** photoconductors)

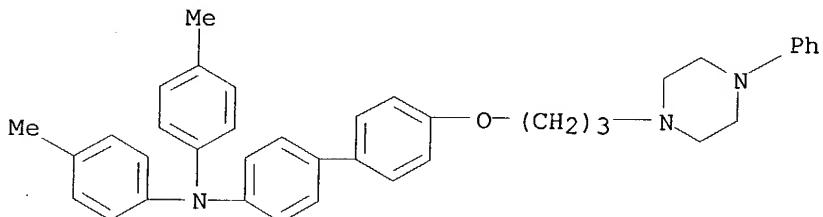
IT 676125-29-4P 676125-30-7P
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(aminobiphenyls as charge-transporting agents for **electrophotog** photoconductors)

IT 92-54-6, 1-Phenylpiperazine 109-89-7, Diethylamine, reactions
167162-32-5 676125-31-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(aminobiphenyls as charge-transporting agents for **electrophotog** photoconductors)

IT 676125-29-4P 676125-30-7P
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(aminobiphenyls as charge-transporting agents for **electrophotog** photoconductors)

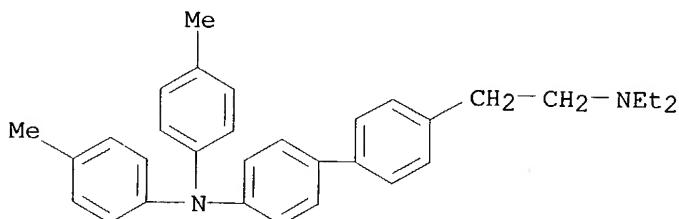
RN 676125-29-4 HCAPLUS

CN [1,1'-Biphenyl]-4-amine, N,N-bis(4-methylphenyl)-4'-[3-(4-phenyl-1-piperazinyl)propoxy]- (9CI) (CA INDEX NAME)



RN 676125-30-7 HCAPLUS

CN [1,1'-Biphenyl]-4-ethanamine, 4'-[bis(4-methylphenyl)amino]-N,N-diethyl- (9CI) (CA INDEX NAME)



L22 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:268733 HCAPLUS
DN 140:311895
TI **Electrophotographic** photoreceptors containing specific tertiary amine in light-sensitive layer for process cartridge of **electrophotographic** image-forming apparatus and method for image formation using the same
IN Shimada, Tomoyuki; Ikegami, Takaaki; Suzuki, Yasuo; Tamoto, Nozomu; Kami,

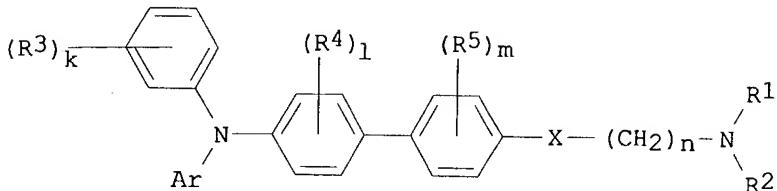
DATE 10/667410 11/10/04 Page 6

PA Hidetoshi
Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 50 pp.
CODEN: JKXXAF

DT Patent
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004102080	A2	20040402	JP 2002-266005	20020911
PRAI	JP 2002-266005		20020911		
OS	MARPAT 140:311895				
GI					



I

AB The title **electrophotog.** photoreceptor has a light-sensitive layer on a support, wherein the light-sensitive layer contains tertiary amine I (R1-2 = alkyl, aromatic hydrocarbon ring; R3-5 = alkyl, alkoxy, halo; X = O, S; n = integer 2-4; k, l, m = integer 0-3). The photoreceptor shows the good durability and long service-life and provides high image quality.

IC ICM G03G005-06

ICS G03G005-07; G03G021-00

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog.** photoreceptor process cartridge image app

IT **Electrophotographic** apparatus

Electrophotographic photoconductors (photoreceptors)

Electrophotography

(**electrophotog.** photoreceptors for process cartridge of **electrophotog.** image-forming apparatus and method for image formation using the same)

IT 676448-98-9 676448-99-0 676449-00-6

676449-01-7 676449-02-8 676449-03-9

676551-91-0 676551-92-1 676551-93-2

676551-94-3 676551-95-4

RL: TEM (Technical or engineered material use); USES (Uses)
(tertiary amine in light-sensitive layer of **electrophotog.** photoreceptor)

IT 676448-98-9 676448-99-0 676449-00-6

676449-01-7 676449-02-8 676449-03-9

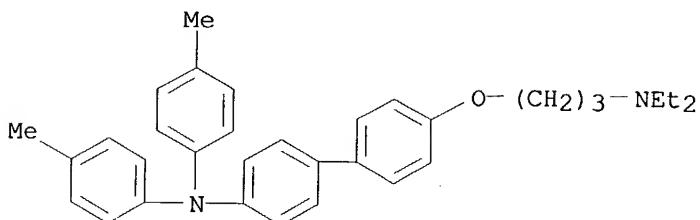
676551-91-0 676551-92-1 676551-93-2

676551-94-3 676551-95-4

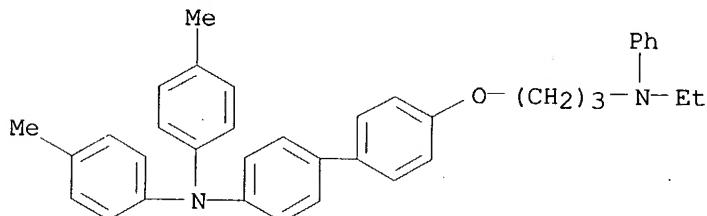
RL: TEM (Technical or engineered material use); USES (Uses)
(tertiary amine in light-sensitive layer of **electrophotog.** photoreceptor)

DATE 10/667410 11/10/04 Page 7

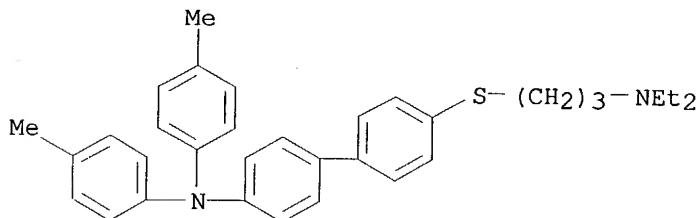
RN 676448-98-9 HCAPLUS
CN [1,1'-Biphenyl]-4-amine, 4'-[3-(diethylamino)propoxy]-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



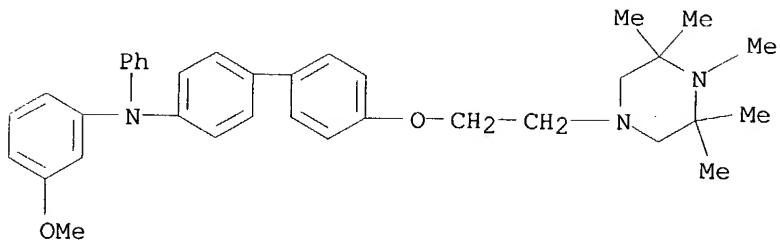
RN 676448-99-0 HCAPLUS
CN [1,1'-Biphenyl]-4-amine, 4'-[3-(ethylphenylamino)propoxy]-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



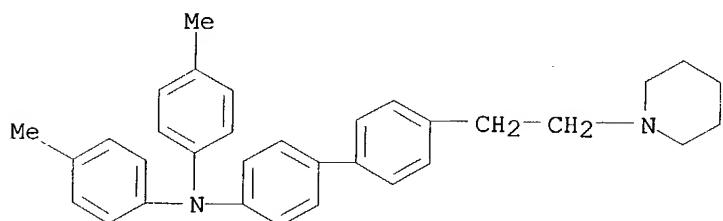
RN 676449-00-6 HCAPLUS
CN [1,1'-Biphenyl]-4-amine, 4'-[3-(diethylamino)propyl]thio-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



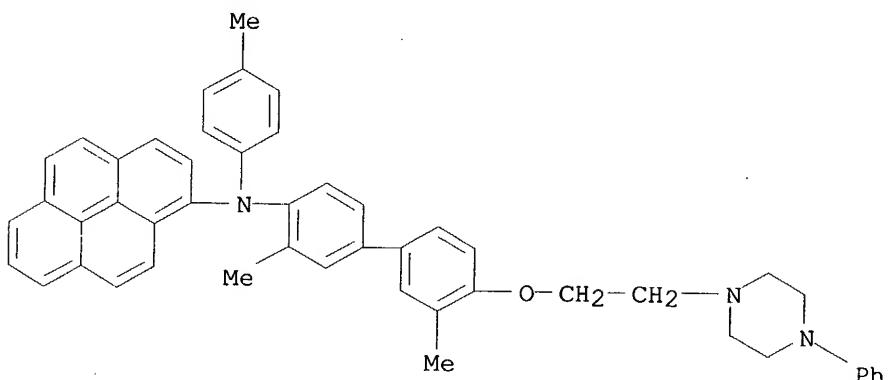
RN 676449-01-7 HCAPLUS
CN [1,1'-Biphenyl]-4-amine, N-(3-methoxyphenyl)-4'-[2-(3,3,4,5,5-pentamethyl-1-piperazinyl)ethoxy]-N-phenyl- (9CI) (CA INDEX NAME)



RN 676449-02-8 HCAPLUS
CN [1,1'-Biphenyl]-4-amine, N,N-bis(4-methylphenyl)-4'-[2-(1-piperidinyl)ethyl]- (9CI) (CA INDEX NAME)

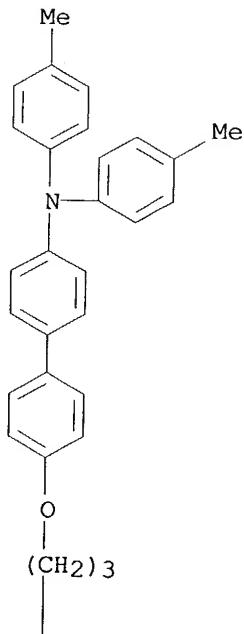


RN 676449-03-9 HCAPLUS
CN 1-Pyrenamine, N-[3,3'-dimethyl-4'-(2-(4-phenyl-1-piperazinyl)ethoxy)[1,1'-biphenyl]-4-yl]-N-(4-methylphenyl)- (9CI) (CA INDEX NAME)

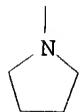


RN 676551-91-0 HCAPLUS
CN [1,1'-Biphenyl]-4-amine, N,N-bis(4-methylphenyl)-4'-(3-(1-pyrrolidinyl)propoxy)- (9CI) (CA INDEX NAME)

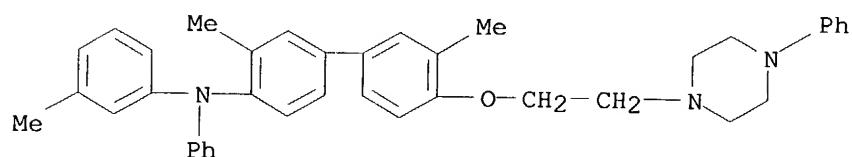
PAGE 1-A



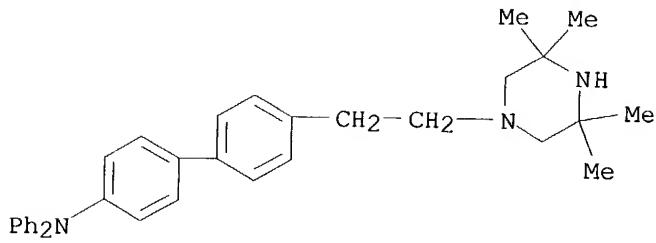
PAGE 2-A



RN 676551-92-1 HCAPLUS
CN [1,1'-Biphenyl]-4-amine, 3,3'-dimethyl-N-(3-methylphenyl)-N-phenyl-4'-(2-(4-phenyl-1-piperazinyl)ethoxy]- (9CI) (CA INDEX NAME)



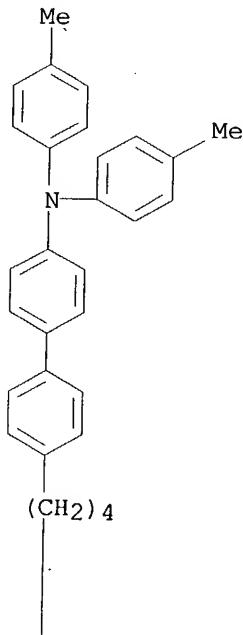
RN 676551-93-2 HCAPLUS
CN [1,1'-Biphenyl]-4-amine, N,N-diphenyl-4'-(2-(3,3,5,5-tetramethyl-1-piperazinyl)ethyl]- (9CI) (CA INDEX NAME)



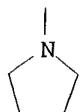
RN 676551-94-3 HCPLUS

CN [1,1'-Biphenyl]-4-amine, N,N-bis(4-methylphenyl)-4'-(4-(1-pyrrolidinyl)butyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

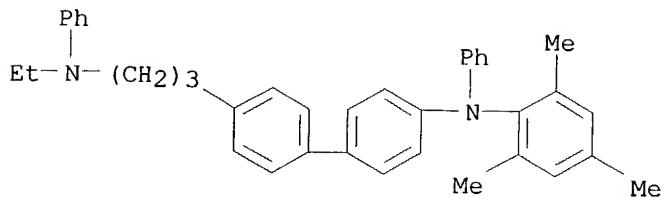


PAGE 2-A



RN 676551-95-4 HCPLUS

CN [1,1'-Biphenyl]-4-propanamine, N-ethyl-N-phenyl-4'-(phenyl(2,4,6-trimethylphenyl)amino)- (9CI) (CA INDEX NAME)



L22 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2004:261079 HCAPLUS

DN 140:311889

TI Specific outermost surface layer **coating** solution for
electrophotographic photoconductor and **electrophotographic**
 apparatus

IN Ikegami, Takaaki; Shimada, Tomoyuki; Suzuki, Yasuo; Tamoto, Nozomu; Kami,
 Hidetoshi

PA Ricoh Company, Japan

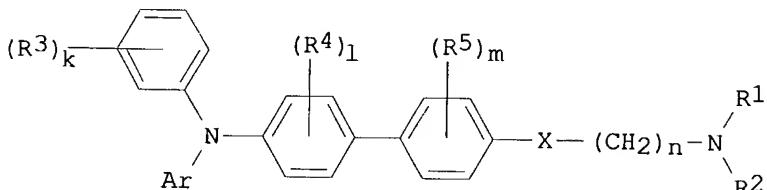
SO Eur. Pat. Appl., 57 pp.
 CODEN: EPXXDW

DT Patent

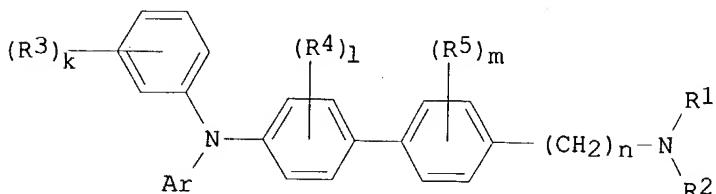
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1403722	A1	20040331	EP 2003-21369	20030922
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK JP 2004102199	A2	20040402	JP 2002-276629	20020924
	US 2004126687	A1	20040701	US 2003-667410	20030923
PRAI	JP 2002-209997	A	20020718		
	JP 2002-276629	A	20020924		
OS	MARPAT 140:311889				
GI					



I



II

AB The present invention relates to an **electrophotog.** photoconductor having at least a photosensitive layer on a conductive support, wherein the **electrophotog.** photoconductor comprising, in the outermost layer thereof: a filler, an organic compound having an acid value of 10-400 mgKOH/g, and at least one of compds. represented by general formulas I and II (R_{1,2} = alkyl groups or aromatic hydrocarbon rings, and may be identical or different, and may also be bonded together to form a substituted or unsubstituted heterocycle containing a nitrogen atom; R₃₋₅ = alkyl or alkoxy groups, or halogen atoms; Ar = aromatic hydrocarbon ring or aromatic heterocycle.; n = 2-4; k, l, m are resp. integers in the range 0 to 3; X = oxygen atom, or a sulfur atom).

IC ICM G03G005-147
ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST outermost surface layer **coating** soln **electrophotog.** photoconductor app

IT Polymers, properties
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(carboxy-containing; specific outermost surface layer **coating** solution for **electrophotog.** photoconductor containing)

IT **Electrophotographic** apparatus
Electrophotographic photoconductors (photoreceptors)
(specific outermost surface layer **coating** solution for **electrophotog.** photoconductor)

IT Acrylic polymers, properties
Polyesters, properties
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(specific outermost surface layer **coating** solution for **electrophotog.** photoconductor containing)

IT 7631-86-9, Silica, uses 13463-67-7, Titanium oxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(filler; specific outermost surface layer **coating** solution for **electrophotog.** photoconductor containing)

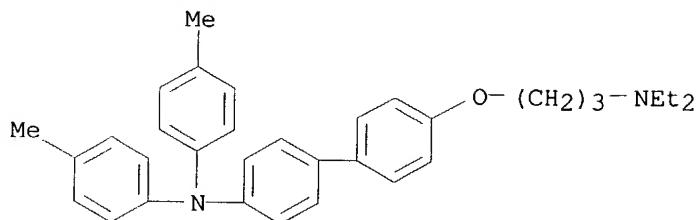
IT 27175-46-8, Acrylic acid-hydroxyethyl methacrylate copolymer 85884-66-8,
Butyl acrylate-maleic acid-styrene copolymer
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(specific outermost surface layer **coating** solution for **electrophotog.** photoconductor containing)

IT 676448-98-9 676448-99-0 676449-00-6
676449-01-7 676449-02-8 676449-03-9
RL: TEM (Technical or engineered material use); USES (Uses)
(specific outermost surface layer **coating** solution for **electrophotog.** photoconductor containing)

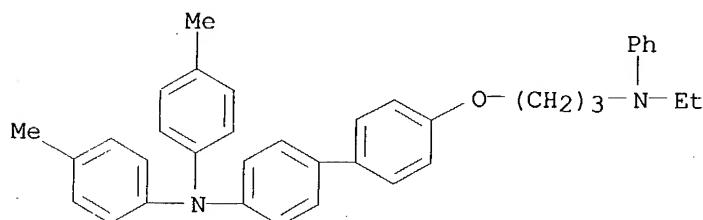
IT 676448-98-9 676448-99-0 676449-00-6
676449-01-7 676449-02-8 676449-03-9
RL: TEM (Technical or engineered material use); USES (Uses)
(specific outermost surface layer **coating** solution for **electrophotog.** photoconductor containing)

RN 676448-98-9 HCPLUS

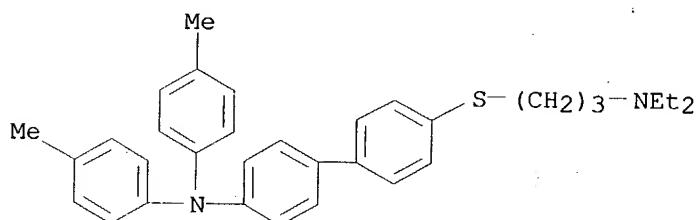
CN [1,1'-Biphenyl]-4-amine, 4'-(3-(diethylamino)propoxy)-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



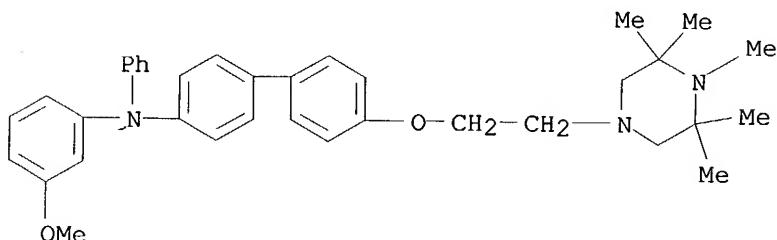
RN 676448-99-0 HCAPLUS
CN [1,1'-Biphenyl]-4-amine, 4'-(3-(ethylphenylamino)propoxy)-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 676449-00-6 HCAPLUS
CN [1,1'-Biphenyl]-4-amine, 4'-(3-(diethylamino)propylthio)-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



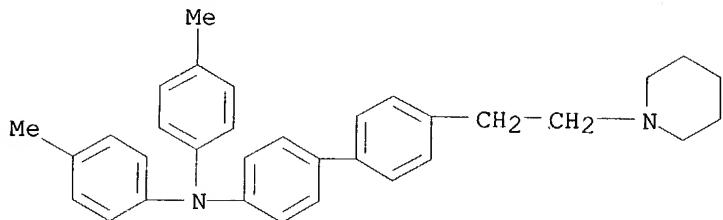
RN 676449-01-7 HCAPLUS
CN [1,1'-Biphenyl]-4-amine, N-(3-methoxyphenyl)-4'-(2-(3,3,4,5,5-pentamethyl-1-piperazinyl)ethoxy)-N-phenyl- (9CI) (CA INDEX NAME)



RN 676449-02-8 HCAPLUS
CN [1,1'-Biphenyl]-4-amine, N,N-bis(4-methylphenyl)-4'-(2-(1-

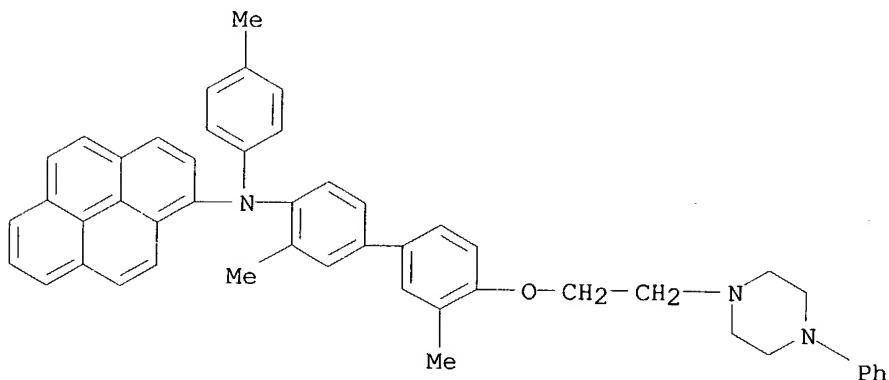
DATE 10/667410 11/10/04 Page 14

piperidinyl)ethyl]- (9CI) (CA INDEX NAME)



RN 676449-03-9 HCPLUS

CN 1-Pyrenamine, N-[3,3'-dimethyl-4'-(2-(4-phenyl-1-piperazinyl)ethoxy)biphenyl]-4-yl]N-(4-methylphenyl)- (9CI) (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 5 OF 14 HCPLUS COPYRIGHT 2004 ACS on STN

AN 2000:440271 HCPLUS

DN 133:65946

TI Laminated **electrophotographic** photoreceptor containing oxotitanium phthalocyanine and hydrazone derivative and its manufacturing method

IN Murakami, Yoshinobu; Onobori, Tsumugi; Aragae, Ryuichi

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2000181106	A2	20000630	JP 1998-351074	19981210
PRAI JP 1998-351074		19981210		
OS MARPAT 133:65946				

AB In the photoreceptor comprising an elec. conducting support having thereon an vapor-deposited oxotitanium phthalocyanine charge-generating layer and a charge-transporting layer containing a hydrazone derivative Ar₁2N(p-C₆H₄) (p-C₆H₄)CH:NNAr₂Ar₃ (I; Ar₁ = Ph, tolyl; Ar₂ = Ph; Ar₃ = Me, Ph; Ar₂ and Ar₃

may form a ring), the oxotitanium phthalocyanine is (A) treated with mixed vapor containing aromatic organic solvent and water, (B) treated with mixed vapor

containing chlorinated aliphatic hydrocarbon and water, (C) soaked in ethylene glycol dialkyl ether and water, or (D) soaked in ethylene glycol alkyl ether acetate and water. In manufacture of the photoreceptor, the vapor deposited oxotitanium phthalocyanine is (a) treated with a mixed. vapor of an organic solvent and water or (b) soaked in a mixed solvent containing ethylene

glycol derivative and water to change its crystal form and then a solution containing

at least the hydrazone derivative I and a binder resin is coated thereon. The photoreceptor shows high sensitivity to semiconductor laser and improved stability and high sensitivity in repeated use.

IC ICM G03G005-06

ICS G03G005-06; G03G005-00; G03G005-047

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog** photoreceptor oxotitanium phthalocyanine vapor deposition; solvent treatment oxotitanium phthalocyanine crystal **electrophotog**; hydrazone charge transporting agent **electrophotog**

IT **Electrophotographic** photoconductors (photoreceptors)

(**electrophotog**. photoreceptor having vapor-deposited oxotitanium phthalocyanine charge-generating layer and hydrazone compound charge-transporting layer)

IT 133878-89-4 133878-91-8 277325-32-3

RL: DEV (Device component use); USES (Uses)

(**electrophotog**. photoreceptor having vapor-deposited oxotitanium phthalocyanine charge-generating layer and hydrazone compound charge-transporting layer)

IT 26201-32-1P

RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)

(**electrophotog**. photoreceptor having vapor-deposited oxotitanium phthalocyanine charge-generating layer and hydrazone compound charge-transporting layer)

IT 67-66-3, uses 108-88-3, Toluene, uses 108-90-7, Chlorobenzene, uses 110-49-6, Ethylene glycol methyl ether acetate 110-71-4, Ethylene glycol dimethyl ether 111-15-9, Ethylene glycol ethyl ether acetate 629-14-1, Ethylene glycol diethyl ether 1300-21-6, Dichloroethane 7732-18-5, Water, uses

RL: NUU (Other use, unclassified); USES (Uses)

(oxotitanium phthalocyanine treated with mixed vapor or solvent)

IT 3468-11-9, 1,3-Diiminoisoindoline 5593-70-4, Tetrabutyl titanate

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of oxotitanium phthalocyanine)

IT 133878-89-4 133878-91-8 277325-32-3

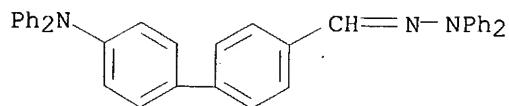
RL: DEV (Device component use); USES (Uses)

(**electrophotog**. photoreceptor having vapor-deposited oxotitanium phthalocyanine charge-generating layer and hydrazone compound charge-transporting layer)

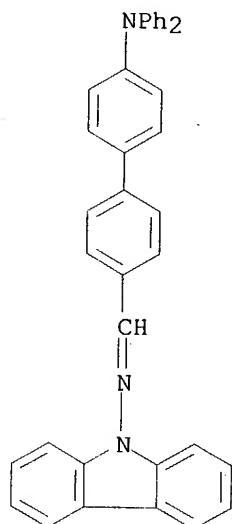
RN 133878-89-4 HCPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)

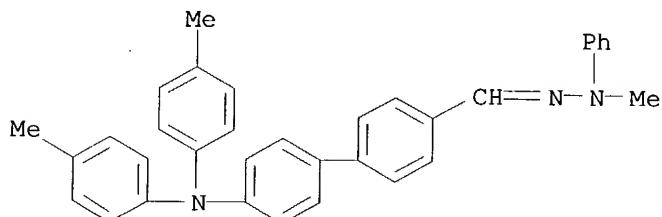
DATE 10/667410 11/10/04 Page 16



RN 133878-91-8 HCAPLUS
CN 9H-Carbazol-9-amine, N-[(4'-(diphenylamino)biphenyl)-4-yl]methylene]-
(9CI) (CA INDEX NAME)



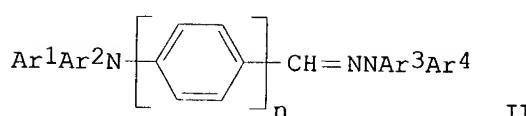
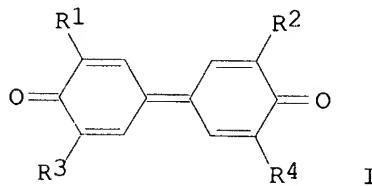
RN 277325-32-3 HCAPLUS
CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(bis(4-methylphenyl)amino)-,
methylphenylhydrazone (9CI) (CA INDEX NAME)



L22 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:641765 HCAPLUS
DN 121:241765
TI Electrophotographic photoreceptors with improved
photosensitivity and durability
IN Nakamori, Hideo; Tanaka, Masafumi; Fukami, Toshuki; Katsukawa, Masahito
PA Mita Industrial Co Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DT Patent

LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06130696 JP 3121147	A2 B2	19940513 20001225	JP 1992-271238	19921009
PRAI	JP 1992-271238		19921009		
GI					



AB The photoreceptors comprise a conductive substrate with a **coating** of a photosensitive layer containing a diphenoquinone compound I [R1-4 = H, (substituted) alkyl, alkoxy, aryl, 2 of R1-4 are same group] as an electron-transporting agent and a hydrazone compound II [R5 = H, (substituted) alkyl, (substituted) alkoxy; Ar1-4 = H, (substituted) alkyl, alkoxy, aralkyl, aryl; n = 1, 2] as a pos. hole-transporting agent. The photoreceptors show high photosensitivity, good durability and low residual potential. Thus, an Al substrate was coated with a composition containing

x-type metal-free phthalocyanine, I (R1 = tert-Bu, R2 = R4 = CHMeEt, R3 = Ph), and II (Ar1=Ar2=Et, Ar3=Ar4=Ph) to give a monolayer photoreceptor.

IC ICM G03G005-06
ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog** photoreceptor electron transporting agent; diphenoquinone deriv **electrophotog** photoreceptor; hydrazone compd **electrophotog** photoreceptor; pos hole transporting agent photoreceptor

IT **Electrophotographic** photoconductors and photoreceptors (containing diphenoquinone compound as electron-transporting agent and hydrazone compound as pos. hole-transporting agent)

IT 68189-23-1 71135-02-9 93754-54-2 **133878-89-4** 151718-08-0
152297-43-3 156543-87-2 158326-15-9 158326-16-0
RL: DEV (Device component use); NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(pos. hole-transporting agent, **electrophotog**. photoreceptor using)

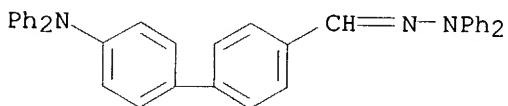
IT 155306-04-0P 155306-05-1P 157488-03-4P
RL: DEV (Device component use); NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of, electron-transporting agent, **electrophotog**. photoreceptor using)

IT 2078-54-8, 2,6-Diisopropylphenol 2416-98-0, 2-tert-Butyl-6-phenylphenol 5510-99-6, 2,6-Di(sec-butylphenol) 152660-60-1, 2-($\alpha,\alpha,\gamma,\gamma$ -Tetramethylbutyl)-6-phenylphenol
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, diphenoquinone compound from)

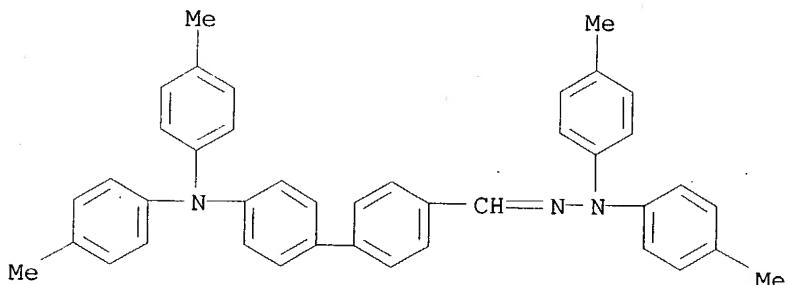
IT **133878-89-4 152297-43-3 156543-87-2**

RL: DEV (Device component use); NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(pos. hole-transporting agent, **electrophotog.** photoreceptor using)

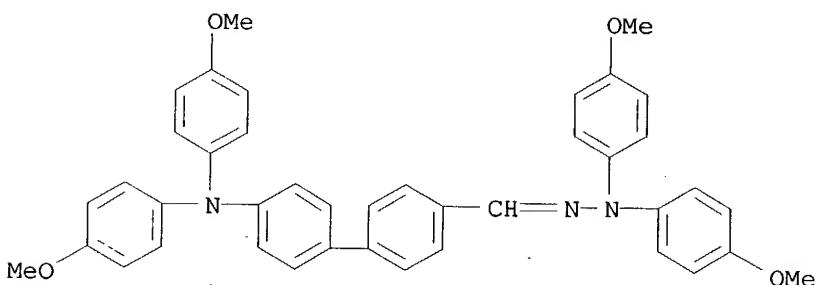
RN 133878-89-4 HCAPLUS
CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)



RN 152297-43-3 HCAPLUS
CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(bis(4-methylphenyl)amino)-, bis(4-methylphenyl)hydrazone (9CI) (CA INDEX NAME)



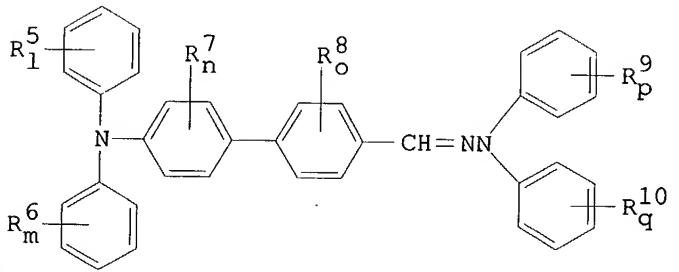
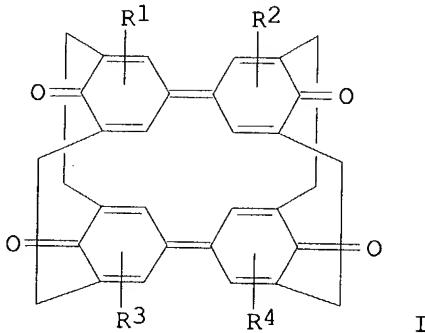
RN 156543-87-2 HCAPLUS
CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methoxyphenyl)amino]-, bis(4-methoxyphenyl)hydrazone (9CI) (CA INDEX NAME)



L22 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:545330 HCAPLUS
DN 121:145330
TI **Electrophotographic** photoreceptors with improved
photosensitivity and cyclicability
IN Fukami, Toshuki; Tanaka, Masafumi; Katsukawa, Masahito; Nakamori, Hideo
PA Mita Industrial Co Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXXAF

DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06075399	A2	19940318	JP 1992-229059	19920828
PRAI	JP 1992-229059		19920828		
GI					



AB The photoreceptors comprise a conductive substrate with a **coating** of a photosensitive layer containing a diphenoquinonophane compound I [R1-4 = H, alkyl, alkoxy, (un)substituted aryl, benzyl] as an electron-transporting agent and, as a pos. hole-transporting agent, a hydrazone compound II [R5-10 = alkyl, alkoxy; l, m, p, q = 0-5; n, o = 0-4]. The photoreceptors show good photosensitivity, cyclicability, and lightfastness. Thus, an Al sheet was coated with a composition containing metal-free phthalocyanine, I (R1-4 = H), and II (R5-10 = H) to give a monolayer photoreceptor.

IC ICM G03G005-06
 ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog** photoreceptor electron transporting agent; hole transporting agent **electrophotog** photoreceptor; diphenoquinonophane compd **electrophotog** photoreceptor; hydrazone compd **electrophotog** photoreceptor; triphenylamine deriv **electrophotog** photoreceptor

IT **Electrophotographic** photoconductors and photoreceptors (diphenoquinonophane compds. as electron-transporting agents and hydrazone compds. as hole-transporting agents for)

IT 133878-89-4 152297-43-3 156543-87-2

RL: USES (Uses)

(electrophotog. photoreceptors containing diphenoquinonophane compds. as electron-transporting agent and, as hole-transporting agent)

IT 136613-03-1 155107-25-8 156242-22-7

RL: USES (Uses)

(electrophotog. photoreceptors containing hydrazone compds. as hole-transporting agent and, as electron-transporting agent)

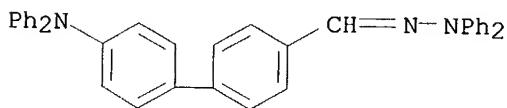
IT 133878-89-4 152297-43-3 156543-87-2

RL: USES (Uses)

(electrophotog. photoreceptors containing diphenoquinonophane compds. as electron-transporting agent and, as hole-transporting agent)

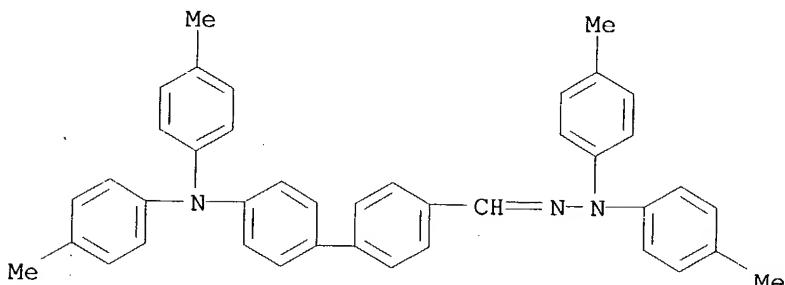
RN 133878-89-4 HCPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)



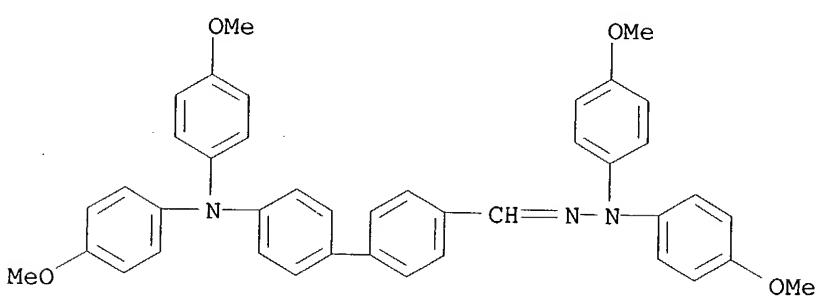
RN 152297-43-3 HCPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methylphenyl)amino]-, bis(4-methylphenyl)hydrazone (9CI) (CA INDEX NAME)



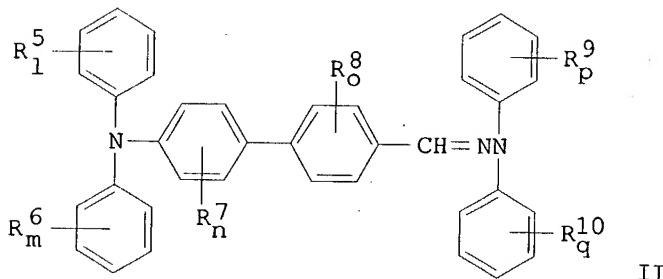
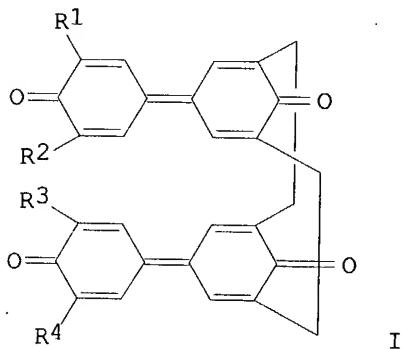
RN 156543-87-2 HCPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methoxyphenyl)amino]-, bis(4-methoxyphenyl)hydrazone (9CI) (CA INDEX NAME)



DN 121:95991
 TI **Electrophotographic** photoreceptors containing diphenoquinophene compound and triphenyl amine derivative
 IN Fukami, Toshuki; Tanaka, Masafumi; Katsukawa, Masahito; Nakamori, Hideo
 PA Mita Industrial Co Ltd, Japan
 SO Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

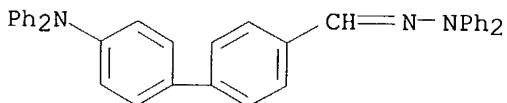
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 06059478	A2	19940304	JP 1992-210206	19920806
PRAI JP 1992-210206		19920806		
GI				



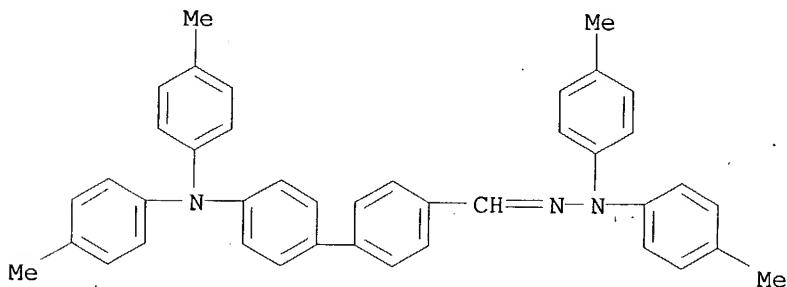
AB The photoreceptors comprise a conductive substrate with a **coating** of a photosensitive layer containing a diphenoquinophene compound I [R1-4 = H, alkyl, alkoxy, (substituted) aryl, benzyl] as an electron-transporting material and II [R5-10 = alkyl, alkoxy; l, m, p, q = 0-5; n, o = 0-4] as a pos. hole-transporting material. The photoreceptors show good photosensitivity, durability, and lightfastness. Thus, an Al sheet was coated with a composition containing metal-free phthalocyanine, I (R1-4 = H), and II (R5-10 = H) to give a single layer-type photoreceptor.
 IC ICM G03G005-06
 ICS G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

DATE 10/667410 11/10/04 Page 22

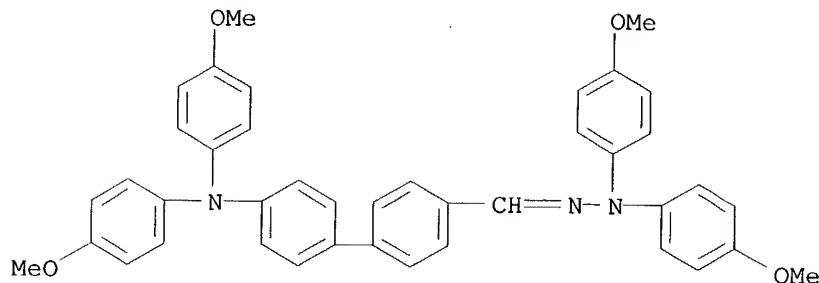
ST **electrophotog** photoreceptor electron transporting agent; pos hole transporting agent photoreceptor; diphenoquinophene compd
electrophotog photoreceptor; triphenylamine deriv
electrophotog photoreceptor
IT **Electrophotographic** photoconductors and photoreceptors
(containing diphenoquinophene compound and triphenylamine derivative)
IT 136613-02-0 155107-24-7 156242-20-5
RL: USES (Uses)
(electron-transporting agent, **electrophotog.** photoreceptor using)
IT 133878-89-4 152297-43-3 156543-87-2
RL: USES (Uses)
(pos. hole-transporting agent, **electrophotog.** photoreceptor using)
IT 133878-89-4 152297-43-3 156543-87-2
RL: USES (Uses)
(pos. hole-transporting agent, **electrophotog.** photoreceptor using)
RN 133878-89-4 HCPLUS
CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)



RN 152297-43-3 HCPLUS
CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methylphenyl)amino]-, bis(4-methylphenyl)hydrazone (9CI) (CA INDEX NAME)

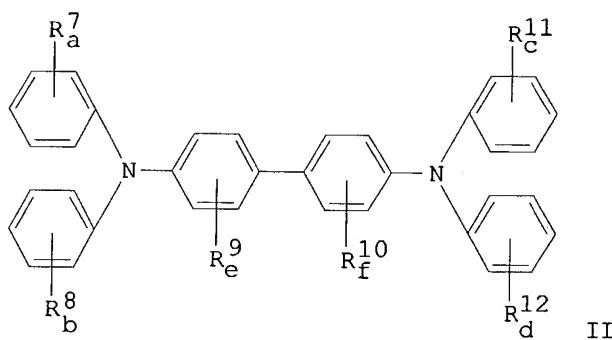
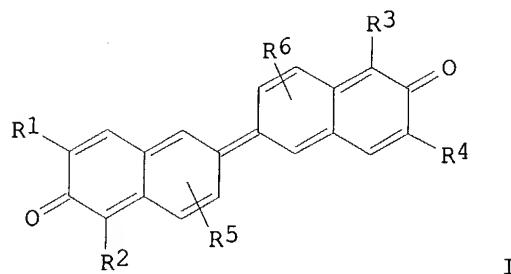


RN 156543-87-2 HCPLUS
CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methoxyphenyl)amino]-, bis(4-methoxyphenyl)hydrazone (9CI) (CA INDEX NAME)



L22 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:334916 HCAPLUS
DN 120:334916
TI **Electrophotographic** photoreceptor using dinaphthoquinone derivative electron-transporting agent
IN Fukami, Toshuki; Katsukawa, Masahito
PA Mita Industrial Co Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 05341545	A2	19931224	JP 1992-147691	19920608
PRAI JP 1992-147691		19920608		
OS MARPAT 120:334916				
GI				



AB The photoreceptor comprises a conductive substrate coated with a photosensitive layer containing a dinaphthoquinone derivative I ($R1-6 = H$, alkyl, aryl, alkoxy, aralkyl) as an electron-transporting agent. The photosensitive layer may contain a diamine compound II ($R7-12 = alkyl, alkoxy, halo, aryl, nitro, cyano, alkylamino; e, f = 0-3; a, b, c, d = 0-2$) as a hole-transporting agent. The photoreceptor shows high photoresponse and good cyclic ability.

IC ICM G03G005-06
ICS G03G005-05

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog** photoreceptor electron transporting naphthoquinone; amine hole transport **electrophotog** photoreceptor

IT **Electrophotographic** photoconductors and photoreceptors (containing dinaphthoquinone electron-transporting agent)

IT 155171-89-4 155171-90-7 155171-91-8

RL: USES (Uses)
(**electrophotog**. photoreceptor electron-transporting agent)

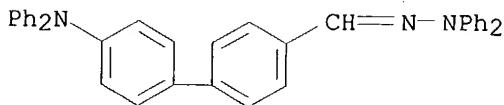
IT 83890-46-4 84746-59-8 89114-90-9 95709-85-6 95905-90-1
96492-42-1 103079-11-4 105465-13-2 116942-09-7 122738-25-4
124591-08-8 127697-06-7 132761-17-2 **133878-89-4**
147845-86-1 151028-59-0 155171-92-9

RL: USES (Uses)
(**electrophotog**. photoreceptor hole-transporting agent)

IT **133878-89-4**
RL: USES (Uses)
(**electrophotog**. photoreceptor hole-transporting agent)

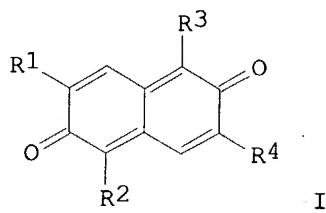
RN 133878-89-4 HCPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)

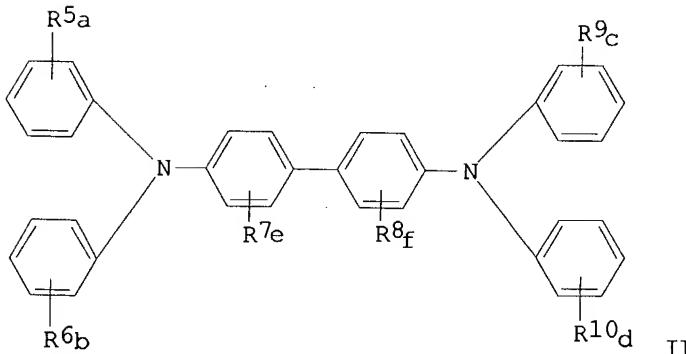


L22 ANSWER 10 OF 14 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 1994:334915 HCPLUS
 DN 120:334915
 TI **Electrophotographic photoreceptor using naphthoquinone derivative electron-transporting agent**
 IN Fukami, Toshuki; Tanaka, Masafumi
 PA Mita Industrial Co Ltd, Japan
 SO Jpn. Kokai Tokkyo Koho, 18 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 05341544	A2	19931224	JP 1992-147690	19920608
PRAI JP 1992-147690		19920608		
OS MARPAT 120:334915				
GI				



I



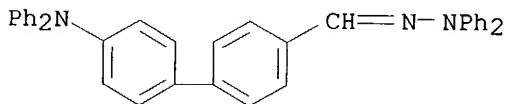
II

AB The photoreceptor comprises a conductive substrate coated with a photosensitive layer containing a naphthoquinone derivative I ($R1-4 = H, \text{alkyl, aryl, alkoxy, aralkyl}$) as an electron-transporting agent. The photosensitive layer may contain a diamine compound II ($R6-10 = \text{alkyl, alkoxy, halo, aryl, nitro, cyano, alkylamino}; e, f = 0-3; a, b, c, d =$

DATE 10/667410 11/10/04 Page 26

0-2) as a hole-transporting agent. The photoreceptor shows high photoresponse and good cyclic stability.

IC ICM G03G005-06
IC S ICS G03G005-05
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **electrophotog** photoreceptor electron transporting naphthoquinone; diamine hole transport **electrophotog** photoreceptor
IT **Electrophotographic** photoconductors and photoreceptors (containing naphthoquinone electron-transporting agent)
IT 155171-89-4 155171-90-7 155171-91-8
RL: USES (Uses)
(**electrophotog.** photoreceptor electron-transporting agent)
IT 83890-46-4 84746-59-8 89114-90-9 95709-85-6 95905-90-1
96492-42-1 103079-11-4 105465-13-2 116942-09-7 122738-25-4
124591-08-8 127697-06-7 132761-17-2 **133878-89-4**
147845-86-1 151028-59-0 155171-92-9
RL: USES (Uses)
(**electrophotog.** photoreceptor hole-transporting agent)
IT **133878-89-4**
RL: USES (Uses)
(**electrophotog.** photoreceptor hole-transporting agent)
RN 133878-89-4 HCAPLUS
CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)



L22 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:90776 HCAPLUS

DN 120:90776

TI **Electrophotographic** photoreceptors with improved photosensitivity and durability

IN Fukami, Toshuki; Tanaka, Masafumi; Hanatani, Yasuyuki

PA Mita Industrial Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

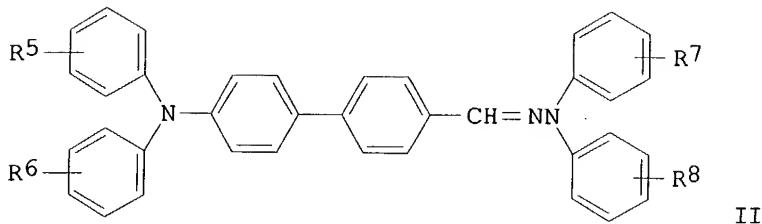
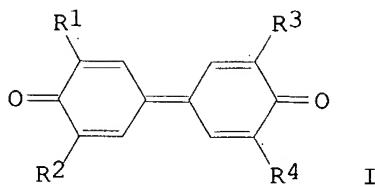
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 05150486	A2	19930618	JP 1991-316604	19911129
PRAI JP 1991-316604		19911129		
GI				



AB The photoreceptors comprise a conductive substrate with a **coating** of an organic photosensitive layer containing a charge-generating agent, an electron-transporting agent I ($R1-4 = H, \text{alkyl, aryl, aroxy, benzyl}$), and a pos. hole-transporting agent II ($R5-8 = H, (\text{substituted}) \text{lower alkyl or alkoxy}$). The photoreceptors show good photosensitivity, durability, lightfastness, and ozone resistance. Thus, an Al substrate was coated with a composition containing metal-free phthalocyanine, I ($R1, R3 = Ph; R2 =$

$R4 =$ tert-Bu), and II ($R5-8 = H$) to give a photoreceptor.

IC ICM G03G005-06
ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **electrophotog** diphenoquinone electron transporting agent; pos hole transporting agent photoreceptor; hydrazone triphenylamine
electrophotog photoreceptor

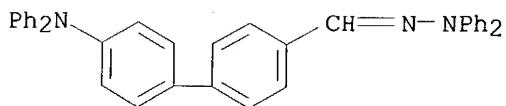
IT **Electrophotographic** photoconductors and photoreceptors (containing diphenoquinone electron-transporting agents and pos. hole-transporting agents)

IT 2416-99-1 126657-30-5 151028-57-8
RL: USES (Uses)
(electron-transporting agent, **electrophotog.** photoreceptor using)

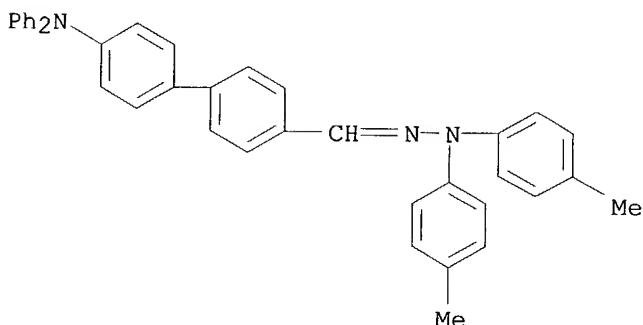
IT 133878-89-4 152297-42-2 152297-43-3
RL: USES (Uses)
(pos. hole-transporting agent, **electrophotog.** photoreceptor using)

IT 133878-89-4 152297-42-2 152297-43-3
RL: USES (Uses)
(pos. hole-transporting agent, **electrophotog.** photoreceptor using)

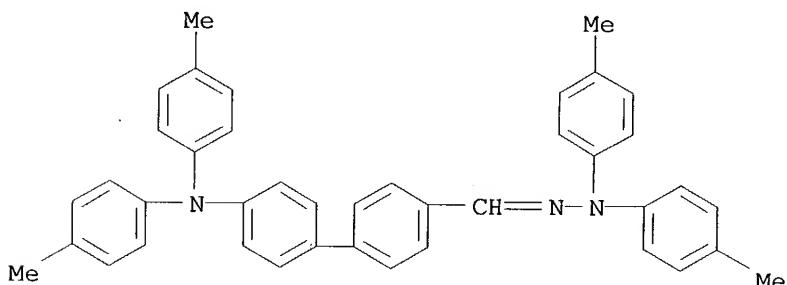
RN 133878-89-4 HCPLUS
CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)



RN 152297-42-2 HCAPLUS
CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-,
bis(4-methylphenyl)hydrazone (9CI) (CA INDEX NAME)



RN 152297-43-3 HCAPLUS
CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-[bis(4-methylphenyl)amino]-,
bis(4-methylphenyl)hydrazone (9CI) (CA INDEX NAME)



L22 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:237619 HCAPLUS

DN 114:237619

TI **Electrophotographic** photoconductors

IN Kobayashi, Toru; Hagiwara, Toshimitsu

PA Takasago Perfumery Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

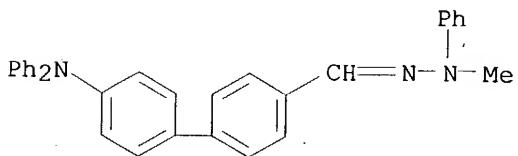
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02272571	A2	19901107	JP 1989-94497	19890414
	JP 2528710	B2	19960828		

PRAI JP 1989-94497 19890414
OS MARPAT 114:237619
GI For diagram(s), see printed CA Issue.
AB Photoconductors contain charge carrier-transporting agents I or II (R1-2 = lower alkyl, benzyl, Ph, or may jointly form an N-containing heterocyclic group). These photoconductors have high sensitivity and stable chargeability, and are highly flexible. Thus, an Al-coated polyester film was coated with Ti phthalocyanine by vacuum deposition, and with a polycarbonate-III charge-transporting layer to obtain a photoconductor. This photoconductor was charged to -1138 V, and showed residual voltage 48 V and sensitivity (exposure required for half decay of voltage) 1.0 lx-s.
IC ICM G03G005-06
ICS C09B026-02
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **electrophotog** photoconductor charge transporting agent
IT Hydrazones
RL: USES (Uses)
(as **electrophotog**. charge-transporting agents)
IT **Electrophotographic** photoconductors
(charge-transporting agents for, hydrazones as)
IT 122011-48-7 122011-51-2 128859-87-0 **133878-88-3**
133878-89-4 **133878-90-7** **133878-91-8**
133897-13-9
RL: USES (Uses)
(charge-transporting agent, **electrophotog**. photoconductors containing)
IT 2920-38-9, 4-Cyanobiphenyl
RL: RCT (Reactant); RACT (Reactant or reagent)
(iodination of, electrog. charge-transporting agents from)
IT 133878-93-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and hydrazone formation of, electrog. charge-transporting agents from)
IT 57774-34-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with diphenylamine, electrog. charge-transporting agents from)
IT **133878-92-9P**
RL: PREP (Preparation)
(preparation and reduction and hydrolysis of, electrog. charge-transporting agents from)
IT 530-50-7, 1,1-Diphenylhydrazine 614-31-3, 1-Benzyl-1-phenylhydrazine
618-40-6 18992-86-4, 1-Aminocarbazole 133878-94-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, hydrazone as **electrophotog**. charge-transporting agent from)
IT 122-39-4, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with iodobiphenyl derivative, electrog. charge-transporting agents from)
IT **133878-88-3** **133878-89-4** **133878-90-7**
133878-91-8
RL: USES (Uses)
(charge-transporting agent, **electrophotog**. photoconductors containing)
RN 133878-88-3 HCAPLUS
CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-,

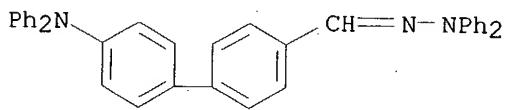
DATE 10/667410 11/10/04 Page 30

methylphenylhydrazone (9CI) (CA INDEX NAME)



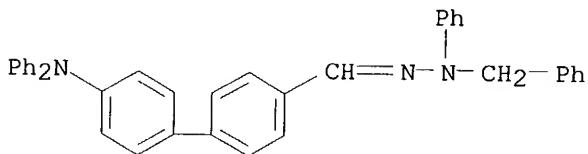
RN 133878-89-4 HCPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, diphenylhydrazone (9CI) (CA INDEX NAME)



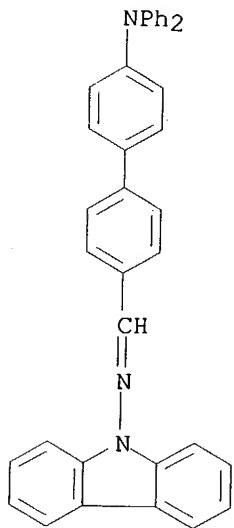
RN 133878-90-7 HCPLUS

CN [1,1'-Biphenyl]-4-carboxaldehyde, 4'-(diphenylamino)-, phenyl(phenylmethyl)hydrazone (9CI) (CA INDEX NAME)



RN 133878-91-8 HCPLUS

CN 9H-Carbazol-9-amine, N-[[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]methylene]- (9CI) (CA INDEX NAME)



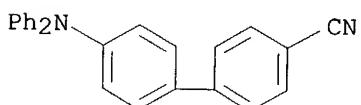
IT 133878-92-9P

RL: PREP (Preparation)

(preparation and reduction and hydrolysis of, electrog. charge-transporting agents from)

RN 133878-92-9 HCPLUS

CN [1,1'-Biphenyl]-4-carbonitrile, 4'-(diphenylamino)- (9CI) (CA INDEX NAME)



L22 ANSWER 13 OF 14 HCPLUS COPYRIGHT 2004 ACS on STN

AN 1991:14906 HCPLUS

DN 114:14906

TI Electrophotographic photoreceptors using terphenyl derivative as charge-transporting agent

IN Kanamaru, Tetsuro; Kikuchi, Norihiro; Suzuki, Koichi; Matsumoto, Masakazu

PA Canon K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

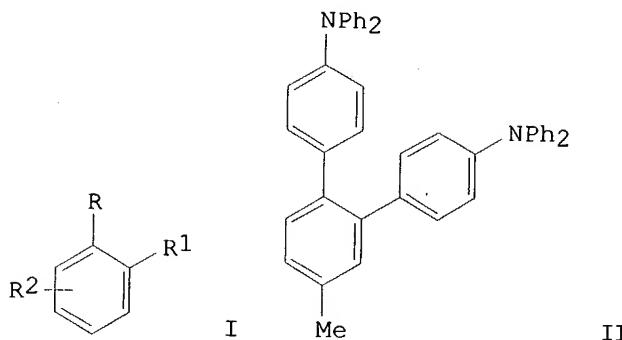
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 02134642	A2	19900523	JP 1988-286862	19881115
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PRAI JP 1988-286862		19881115		
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GI				
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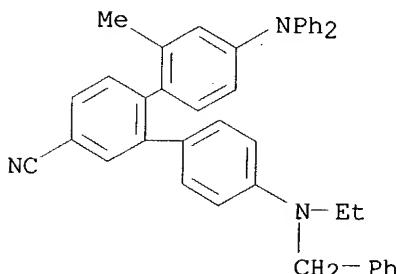
AB The title photoreceptors comprise a conductive support with a **coating** of a photosensitive layer containing a o-terphenyl derivative I [R, R1 = (substituted) aryl, heterocycle, ≥ 1 of them have NR3R4 [R3, R4 = H, (substituted) alkyl, aryl, aralkyl, heterocycle, R3 and R4 may form a 5- to 7-membered ring]; R2 = H, alkyl, alkoxy, halo, CN, NO₂, acyl, CF₃]. A photoreceptor using a bisazo pigment and II showed good photosensitivity and durability.

IC ICM G03G005-06
ICS C07D209-86; C07D213-74; C07D223-22; C09K009-02; G03G005-06
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 25

ST **electrophotog** photoreceptor charge transporting agent; terphenyl deriv **electrophotog** photoreceptor
IT **Electrophotographic** photoconductors
(using terphenyl derivative as charge-transporting agent)
IT 14039-00-0, 4-(4-Dimethylaminophenyl)-2,6-diphenylthiapyrylium perchlorate
107047-66-5 111919-13-2 124329-68-6 129582-84-9
RL: USES (Uses)
(charge-generating agent, **electrophotog**. photoreceptor using terphenyl derivative as charge-transporting agent and)
IT 130951-80-3 130951-81-4 130951-82-5 130951-83-6 130951-84-7
130951-85-8 130951-86-9 130951-87-0 130951-88-1 130951-89-2
130951-90-5 130951-91-6 130951-92-7 130951-93-8
130951-94-9 130951-95-0 130951-96-1 130972-56-4
RL: USES (Uses)
(charge-transporting agent, **electrophotog**. photoreceptor using)
IT 84-15-1, o-Terphenyl
RL: RCT (Reactant); RACT (Reactant or reagent)
(nitration and reduction of)
IT 130951-97-2P, [1,1':2',1''-Terphenyl]-4,4''-diamine
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of)
IT 130951-79-0P
RL: PREP (Preparation)
(preparation of, charge-transporting agent, **electrophotog**. photoreceptor using)
IT 74-88-4, Methyl iodide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of)
IT **130951-90-5**

RL: USES (Uses)
 (charge-transporting agent, **electrophotog.** photoreceptor
 using)

RN 130951-90-5 HCAPLUS

CN [1,1':2',1'''-Terphenyl]-4'-carbonitrile, 4-(diphenylamino)-4'''-
 [ethyl(phenylmethyl)amino]-2-methyl- (9CI) (CA INDEX NAME)

L22 ANSWER 14 OF 14 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1990:66714 HCAPLUS

DN 112:66714

TI Improved **electrophotographic** photoreceptor containing organic sulfide

IN Matsumoto, Masakazu; Ishikawa, Shozo; Ando, Wataru; Kikuchi, Toshihiro; Yamazaki, Itaru

PA Canon K. K., Japan

SO Fr. Demande, 109 pp.

CODEN: FRXXBL

DT Patent

LA French

FAN.CNT 1

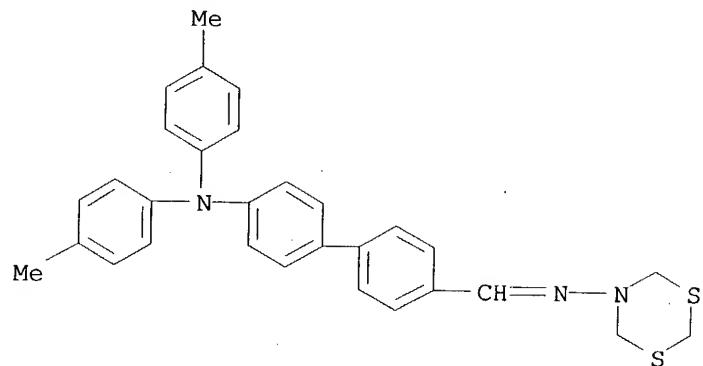
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2623638	A1	19890526	FR 1988-15260	19881123
	FR 2623638	B1	19940408		
	JP 01136161	A2	19890529	JP 1987-296447	19871124
	JP 05049227	B4	19930723		
	JP 01136160	A2	19890529	JP 1987-296446	19871124
	JP 01136159	A2	19890529	JP 1987-296444	19871124
	JP 01136158	A2	19890529	JP 1987-296443	19871124
	JP 01140162	A2	19890601	JP 1987-299045	19871126
	JP 05002983	B4	19930113		
	US 4931371	A	19900605	US 1988-274503	19881121
PRAI	JP 1987-296443		19871124		
	JP 1987-296444		19871124		
	JP 1987-296446		19871124		
	JP 1987-296447		19871124		
	JP 1987-299045		19871126		

AB An **electrophotog.** photoconductor is described with a support and a photosensitive layer containing a compound having an aminoaryl group of the formula R1R2NAr1 [R1, R2 = alkyl, aryl, aralkyl, or a group for forming a 5- or 6-membered ring; Ar1 = arylene], and a group of the formula SR3 [R3 = alkyl, aralkyl], SSR4 [R4 = alkyl, aryl, aralkyl], SR5 [R5 = aryl] and SR6 [R6 = R4], or a cyclic sulfide containing ≥ 2 S atoms; or a thioether of the formula R1R2NAr2(CH:CH)nCH:C(X)Y [Ar2 = arylene, a divalent heterocyclic group; n = 0 or 1; X = SR7 or SOR8; Y = SR9, alkyl,

aralkyl, aryl (R7-R9 = R4); X and Y together may form a thioether group]. The photoconductor has improved elec. properties. Thus, (MeS-p-C6H4)2NC6H4-p-SMe was used in the charge transport layer of a multilayer **electrophotog.** photoconductor.

IC ICM G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 25
 ST **electrophotog** photoconductor sulfide charge transport; aminoaryl sulfide charge transport; thioether charge transport
 IT Disulfides
 Sulfides, uses and miscellaneous
 RL: USES (Uses)
 (as charge-transport agent in photoconductors)
 IT **Electrophotographic** photoconductors
 Electrophotographic plates
 (containing aminoaryl sulfide or thioether)
 IT Sulfides, uses and miscellaneous
 RL: USES (Uses)
 (aminoaryl, as charge-transport agent in photoconductors)
 IT 114315-13-8 124905-40-4 124905-41-5 124905-42-6 124905-43-7
 124905-44-8 124905-45-9 124905-46-0 124905-47-1 124905-48-2
 124905-49-3 124905-50-6 124905-51-7 124905-52-8 124905-53-9
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 124905-59-5 124905-60-8 124905-61-9 124905-62-0 124905-63-1
 124905-64-2 124905-65-3 124905-66-4 124905-67-5 124905-68-6
 124905-69-7 124905-70-0 124905-71-1 124905-72-2 124905-73-3
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 124905-79-9 124905-80-2 124905-81-3 124905-82-4 124905-83-5
 124905-84-6 124905-85-7 124905-86-8 124905-87-9 124905-88-0
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 124905-99-3 124906-00-9 124906-01-0 124906-02-1 124906-03-2
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 124906-14-5 124906-15-6 **124906-16-7** 124906-17-8
 124906-18-9 124906-19-0 124906-20-3 124906-21-4 124906-22-5
 124906-23-6 124906-24-7 124906-25-8 124906-26-9 124906-27-0
 124906-28-1 124906-29-2 124906-30-5 124906-31-6 124906-32-7
 124906-33-8 124926-43-8 124926-44-9 124926-45-0 124926-46-1
 124926-47-2 124926-48-3 124926-49-4 124926-50-7 124926-51-8
 RL: USES (Uses)
 (**electrophotog.** photoconductor containing)
 IT 124906-34-9P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and use of, in **electrophotog.** photoconductor)
 IT 121-45-9 1748-15-8, 1,3-Dithiane-2-thione 4181-05-9,
 p-Diphenylaminobenzaldehyde
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactions of, organic sulfide from)
 IT **124906-16-7**
 RL: USES (Uses)
 (**electrophotog.** photoconductor containing)
 RN 124906-16-7 HCPLUS
 CN 4H-1,3,5-Dithiazin-5(6H)-amine, N-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]methylene]- (9CI) (CA INDEX NAME)

DATE 10/667410 11/10/04 Page 35



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